

Notice of Allowability

Application No.

09/588,242

Examiner

Tuan V. Thai

Applicant(s)

POSTON, LLOYD ALAN

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to IDS filed 4/12/2007.
2. ☒ The allowed claim(s) is/are 9-10, 12-20 and 33-38 renumbered as 1-17 respectively.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

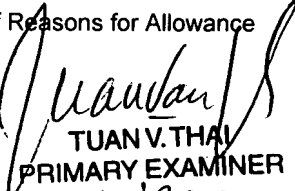
4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 4/12/07
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


TUAN V. THAI
PRIMARY EXAMINER
GPOVP 2100

Application/Control Number: 09/588,242

Art Unit: 2186

Attorney's Docket No.: 072228.0102

**IN THE UNITED STATES PATENT AND
TRADEMARK OFFICE**

In re application of: Poston, Lloyd Alan **Group:** 2186

Serial No.: 09/588,242 **Examiner:** Tuan Thai

For: ***PRODUCING A MASS STORAGE BACKUP USING A LOG OF WRITE
COMMANDS AND TIME INFORMATION.***

1. This action is responsive to (a) amendment filed 11/16/2005 which serves as a Withdrawal of Notice of Appeal, and (b) IDS filed 4/12/2007. Claims 1-8, 11 and 21-32 have been canceled. Claims 9-10, 12-20 and 33-38 are now allowed.

REASONS FOR ALLOWANCE

2. The following is an Examiner's Statement of Reasons for Allowance:

The prior arts of record do not teach or suggest, alone or in combination, **all** the limitations of the independent claims of the current invention (claims 9, 17, 20 and 33). Claim 9 references method for backing up a mass storage; claim 17 references a method for recreating the state of a mass storage device at a given time; claim 20 references an article of

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manufacture comprising a computer readable media and computer code for performing steps of claim 9; and claim 33 references a method for continuously backing computer data to a mass storage system. The prior arts of record do not teach nor suggest a method (claim 9) and article of manufacture (claim 20) for backing up a mass storage comprises accepting, at a log-assisted disk, mass storage write commands for the mass storage to be backed up at a log-assisted disk; appending a time to each of said mass storage write commands to form a log entry at the log-assisted disk; queuing log entries in a log queue at the log-assisted disk; and writing log entries from the log queue into a log file in a local mass storage different from the mass storage to be backed up. The prior arts of record do not further teach a method of recreating the state of a mass storage device at a given time of claim 17 comprises steps of accepting a snapshot of the state of a mass storage device taken at a point in time earlier than the given time; accepting log entries having timestamps later than the point in time of the snapshot; writing the snapshot to a storage device on which the mass storage device is being restored; writing the log entries having timestamps later than the point in time of the snapshot to the storage device on which the mass storage device is being restored; and terminating the writing of the log entries when the timestamp of the log entry is equal to the given time. In addition, the

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prior arts of record do not teach a method for continuously backing up computer data to a mass storage system of claim 33 wherein the method comprising steps of receiving write commands from an application running on a computer; converting each received write command to a sector write having a sector address and sector data; sending each sector write to a log-assisted disk; combining each sector write with a time stamp at the log-assisted disk to form a log entry; queuing log entries at the log-assisted disk, communicating the log entries to a mass storage system; and storing the log entries in a log file at the mass storage system. In light of the foregoing; claims 9, 17, 20 and 33 of the present application are found to be patentable over the prior arts.

Claims 10, 12-16, 18-19 and 34-38 further limit the allowable independent claims 9, 17 and 33. The claims are therefore allowable for the same reason as set forth above.

Any comments considered necessary by Applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan V.

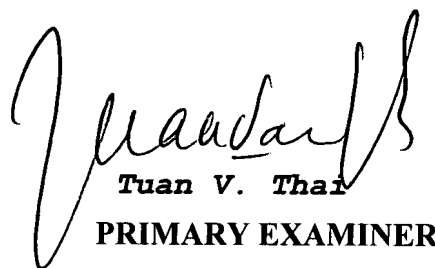
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Thai whose telephone number is (571)-272-4187. The examiner can normally be reached on from 6:30 A.M. to 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mathew M. Kim can be reached on (571)-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVT/April 26, 2007



Tuan V. Thai
PRIMARY EXAMINER
Group 2100